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AMERICAN BEE JOURNAL.

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CONTRIBUTED ARTICLES

The Digestive Machinery of Honey-Bees.

BY PROF. A. J. COOK.

We know from our study of Geology that early life-forms in any branch of animals are simplest, and later gain more and more in complexity. Among insects, bees and their near congeners were the latest to develop. Indeed, there were no flowering plants until the Cretaceous Age—the age just before recent time—and so of course there could have been no flower-loving or nectar-sipping animals. As bees were so late in their evolution, we should expect them to exhibit marvelous development, not only as a whole, but also in their various organs. And such is the case to a most marked degree. I know of no animals—nor need I except man in the statement

surely have reason to place the bee away in the lead among the marvels of God's creation.

The bee's food is peculiarly refined and complex. Its provident storing of food, social habits, long life, entire care of the young, are exceptional among all the lower animals. It fashions vessels for food depositaries, of incomparable mechanism and beauty. It has lunch-baskets and dinner-pails that challenge anything of man's device; while its brushes, its pincers, as also its industry, may well give it a first place among all God's creatures—man alone excepted.

The food of bees is for the most part the very concentrated pollen of flowers, which, like meal and flour, is rich in albumen, starch and oil; and honey, or the transformed nectar of flowers, which supplies the other element of a perfect food regimen. To prepare such food, we should expect the bee to possess a very highly wrought digestive organism. When we add to this the fact that the young or larval bees are wholly fed by the mature bees, and with a food so perfect in its composition, combination and preparation that almost all of it—essentially all—is assimilated, then surely we are in way to appreciate the alimentary apparatus of the honey-bee.

Once more, the queen-bee, also fed by the workers on prepared food, possibly the same that nourishes the immature bees, lays often 2,000 to 3,000 eggs daily. These actually



Mr. J. M. Young and Apiary, of Cass County, Nebraska.—See page 8.

—where the development of so many organs is carried so far. Man in his brain, and the hand that it directs, shows transcendent modification. The bee in its mouth-organs—almost all of them—in its glandular structures; in its leg development; in the very hairs that adorn it; in its wondrously modified ovipositor; and, lastly, in its marvelously modified digestive organism, shows structural modifications that are hardly surpassed in all the realm of life. If we add to these the functional differentiation into queen, male and worker, we

weigh nearly double the queen's entire weight. Does this not speak volumes for the excellence of the food given her, and of the organism that prepares it? I have already shown to the readers of the American Bee Journal how honey is the result of action upon the nectar of flowers, by the secretion from the large glands in the head and thorax, which is emptied just at the base of the tongue, and so mingles generously with the nectar as it streams into the mouth en route for the honey-stomach. This part of the bee's alimentary system and

alimentation is not superior or greatly different from that of many other animals, and I will not discuss it farther now.

The point of greatest interest is the source of the "jelly," the specially prepared food for the larvæ and the queen, and doubtless the drones. Some have thought this to be a secretion from the large lower head-glands. But as I have shown that charcoal finally pulverized and fed to bees is found in this "jelly," and in the "royal jelly"—the special food of the larval queen—it seems certain that the jelly cannot be a secretion. The most probable view seems to be that the pollen is mixt with the secretion from the lower head-glands and then past to the true stomach, possibly mixt with some honey, and digested or changed to the marvelous food—the jelly. This is probably regurgitated and served to the larvæ, queen and drones. If the secretion from the lower head-gland is not used to digest the pollen, it is difficult to know what is, as it does not seem possible that the stomach could secrete enough "gastric juice" to do it.

An objection to the above view is urged in the fact that a membranous tube hangs from the lower end of the honey-stomach into the true stomach, which acts as a valve like our ilio-colic valve, and would not permit any of the contents to pass from the true stomach back to the mouth. This would be so except that the bee doubtless has the power to draw the honey-stomach up, so that this tube ceases to hang into the true stomach, and thus loses its force as a valve. Just so our ilio-cæcal valve can be made to lose its valvular action, as in case of severe wrenching when the contents of the large bowel may be vomited up. Thus it seems more than probable that the incomparable food prepared by the nurse-bees is compounded of digested pollen and honey; that it is prepared in the true stomach, and regurgitated for the queen, drone, larvæ, and possibly for the older workers.

There is one more organ in the honey-stomach of the worker-bees which merits notice. It is a spherical organ with jaw-like segments that leave a central opening, thickly set with hairs that reach upwards. When the bee is taking honey into the honey-stomach these jaws are constantly opening and closing, which draws in the nectar and forces it back. Any pollen in the nectar is caught and held by the hairs, and thus these stomach-jaws, or this honey-stomach mouth is constantly ridding the nectar or honey of the pollen; and thus we see why honey is so free of pollen, even though the nectar may be rich in the same. This ever-active stomach-mouth is always screening it out, as the bee is gathering the precious nectar.

Los Angeles Co., Calif.



A Lady's Experience with Bees in 1897.

BY MRS. L. C. AXTELL.

We began the season with 150 colonies, one absconded, flew away, and we did not miss it until gone, but we knew all came through the winter alive. A very few were weak, but on the whole they wintered splendidly.

We did not open the hives until in May, when he hunted out the queens and clipped their wings. We found two or three queenless colonies, and gave them eggs and larvæ, and both reared themselves a queen. One had to have brood and a cell given the second time. When swarming began we took combs from the parent colonies and built up those colonies into strong ones, and put on sections. We increased from 150 to 162 colonies, and secured about 5,000 pounds of honey, 36 or more pounds per colony, spring count.

DID NEARLY ALL THE WORK ALONE.

As Mr. Axtell has now a peach orchard of about 1,600 trees, and 200 or 300 pear, plum and apple trees, besides raspberries, blackberries and strawberries to care for, I took the sole care of the bees the past season, after being taken from the cellar, up to October, except Mr. A. carried the honey to the honey-house for me after it was taken from the hives; also while resting in his hammock during the middle of the day he watched swarming and caught in the queen-cages about half a dozen queens. The rest of the work I did myself, and enjoyed it. I felt burdened but little with my bee-work, because I took all needed rest, neglected nothing that needed to be done on time, and made every step count. I do not think we had a great honey crop, but surely our bees paid for my work. I sold all the best grade, delivered at our town, for 10 cents per pound at one sale, and the rest of darker grades are working off in small sales, and at stores, for about the same price.

FARMER BEE-KEEPERS INJURING THE HONEY MARKET.

If farmers would not be in such a rush to sell their honey, and ask a fair price for it, and hold it at that price, it would

not bring honey down every fall as it does. They act as if they were afraid they could not sell if they did not offer it lower than those who had larger crops. This seems to hurt our market more than honey adulterated, as people are learning that the honey in tumblers is sugar syrup with but a trifle of honey in it, and those who come for pure honey will not buy it in that way to a large extent, and yet adulterated honey is a drawback to good prices.

A HONEY SOCIABLE—CLEANING SECTIONS.

We had the "Aid Society" of the Christian church meet at our house one day about a month ago, with their pastor—some 20 ladies to help me prepare and clean the honey sections before selling. We requested them all to wear gowns that washing would not hurt, and bring sharp pocket-knives. Some came at 9 and 10 o'clock, and staid all day. I got dinner for them, and paid the society 10 cents besides, for every one who worked. They expressed themselves as having a very enjoyable time, and said they wanted to come again next year, and considering their belag new hands they did their work well. They fitted up some 1,500 pounds that day.

To get the honey ready for market is the hardest and most difficult bee-work for me. To hire it done by young people, it is so often injured; honey cut, and sections sliced off or haggled, but to bring the best price, each section should be nicely cleaned. Those ladies being middle-aged, did their work better than I feared it might be done.

The honey should be in a pile in the middle of the room, or two or three rooms, so people could get around it easily to work.

HELPING WEAK COLONIES.

In the fall, when taking off honey, or even in midsummer when a few bees remain in the supers, and gather in a bunch on the window, which they will do (unless a large escape is given) as soon as they cluster, I take a milk-pan with warm water in it—just warm enough not to chill the bees—and brush the cluster of bees into it and carry quickly and pour them down close to the entrance of a weak colony, if we have any. I put all I can get in that way in front of one hive, until I am sure it is strong enough. If the weather is cool I would lay a soft cloth over the cluster.

LAYING WORKERS.

In September I found one colony that had laying workers. I took two combs and gave to colonies that did not have combs enough to make a full colony. Two other combs I gave to a similar colony, and took all the bees and gave them to a weak colony that had a queen, and the returning bees were allowed to go into another weak colony. I could not detect that scarcely any bees were killed, and those I carried away mostly remained, they having found a queen made them contented to remain, and put a shade-board over the front of the hive.

I felt that such a disposition of combs and bees at that time of the year was better than to help them rear a queen.

UNITING WEAK COLONIES UNPROFITABLE.

The uniting of weak colonies in the spring does not pay very well. After uniting, in a few days the colony seems just about as weak as before being united, but if strong to cover two combs well in April or May, exchange the two and giving one or two of brood with eggs and larvæ will carry them through until they can rear themselves a queen, and then build them up in swarming-time. I find it does not pay to fuss much with small colonies; fix them up so they can keep warm, and leave them alone, and give the extra care and time to the strong ones. It does not pay to take much brood from the strong to build up the weak until in swarming-time.

Warren Co., Ill.



Something About Swarming—How It is Done.

BY G. M. DOOLITTLE.

QUESTION.—"A bee-keeping friend and myself have had a dispute relative to how swarming is conducted, and we have agreed to leave the matter to an arbitrator. He has chosen you as that arbitrator, and I could not object. We also have agreed to ask you to answer, or give your views in the matter, in the American Bee Journal, as we both take that paper, and both think that your views may not be uninteresting to other readers also. My friend claims that when a swarm issues from any colony, that the old bees, or field-workers, go with the old or reigning queen, leaving the younger bees with the queen-cells left behind to go out with any after-swarm which may chance to issue. He also claims that a young queen

hatches within a day or so after the first swarm has left, which drills the young bees till they are inclined to go out with her in an after-swarm. I claim that bees of all ages go with the old queen in the prime swarm, and that the young queen, or queens, which go with the after-swarms do not hatch out in several days after the first swarm went out. Which is right? Or is swarming conducted differently from what either of us think?"

ANSWER.—Natural swarming has always had a charm or fascination to me, and among my earliest recollections is the vivid picture of thousands of bees pouring out of their hives and whirling in midair, describing circles and passing each other in such rapid movements that I stood and wondered how they could possibly do it without hitting each other, while the settling on a limb and their march into the hive, when father put them down in front, astonished me as much as any of the rest of the performance.

From these first impressions, I presume, more than from anything else, has come my preference for natural swarming as a means of increase. Being thus interested I have experimented largely to know under what conditions swarms issued as a rule, and have found, as regards the age of bees, that bees of all ages in about equal proportions leave the parent hive with all swarms, from the old forager to the bee that has not been out of the cell more than from 6 to 12 hours. Many times have I seen the ground in front of the hive nearly covered with bees so young as to be unable to fly; and as often have I seen the old field-workers with their worn and jagged wings hanging with the swarm, and those having their pollen-baskets filled with pollen, side by side with the young, downy bees which had been barely able to fly to the cluster. Thus we have the field-bees, the wax-workers, and the nurse-bees in about equal proportions, so as to make a prosperous colony at once upon their entering their new home, this showing that the All-Wise Creator knew how things should be when he pronounced all that he had made good.

If it were not for young bees going with the swarm, the hive would be nearly depopulated by the bees dying of old age before the brood could hatch out to take their places, as it must be nearly two days before sufficient comb would be built so the queen could deposit eggs in the cells, and then it would take 21 days from that time before any bees would hatch.

Again, if all were old or field bees the hive could not be filled as profitably with comb; for when in a normal condition the bees between the age of 8 and 24 days old are the ones which do this work. That this division of bees in a swarm is just as it should be is another reason why I prefer natural swarming as a means of increase, altho I have made swarms artificially which have given as good results as have any natural swarms.

But let us look inside of the hive when preparations for swarming are being made, and see if we cannot arrive at the truth in the matter as regards the condition under which a swarm issues when the first queen hatches, etc.

The first indication of swarming is the laying of eggs in the drone-comb. While eggs in the drone-cells is not a sure sign that a swarm will issue, yet as far as I have observed swarms never do issue without eggs being laid therein. If the weather is propitious the next step is the building of queen-cells, soon after which the queen deposits eggs in them. In three days these eggs hatch into larvae, and these larvae are fed an abundance of food by the nurse-bees for six days, when the cells containing the embryo queens are sealed over. If no bad weather has intervened the swarm issues the next day, the old queen going with the swarm. Bear in mind that this is the rule with the black or German bees, and generally with other races; still, the Italians often swarm when the eggs are first laid in the queen-cells, and some without the least preparation at all except drones in a time when swarming runs high in an apiary.

All good authorities admit that the queen-larva remains seven days in the cell after it is sealed over, as my experience also proves, and any claim that a young queen would hatch within a day or two after the swarm issues would be fallacious, unless bad weather should occur at about the time the first queen-cell was sealed. When such bad weather does occur the thing is barely possible for the swarm to be kept back for four or five days after they would naturally issue, in which case the first queen might hatch in one or two days after the swarm went out. But this is something which I have had occur but very few times since I have kept bees, covering a period of nearly 30 years, and in nearly all such cases the bees destroy the queen-cells and postpone swarming for an indefinite period.

So I find, as a rule, that the first queen emerges from her cell from six to seven days after the swarm issues. If more swarms are allowed, they come forth two days after, or from

the eighth to the ninth day after the first, and never later than the sixteenth day. As soon as it is decided that no more swarms shall issue, all queens in the cells are destroyed, when in from five to nine days the young queen goes out to be fertilized, two days after which she commences to lay. If the apiarist stops all after-swarming by the cutting of the queen-cells, or by other means that keeps all of the bees in the old hive together after the first issue, I find that the young queen is much slower in going out on her wedding trip, and often does not commence to lay till from the twelfth to the sixteenth day.

Where one wishes to make artificial increase it is well to understand just how natural swarming is conducted, for with such knowledge one is more apt to succeed in having the right proportion of both old and young bees in the two parts after dividing.

Onondaga Co., N. Y.



The Bee-Moth—Its Ravages and Destruction.

BY C. P. DADANT.

A few days ago while removing the dry supers from which the honey was extracted in September, and which had been returned to the bees so that they might clean them up, our boys discovered a colony in which both the super and the brood-frames were invaded by the bee-moth in such a way as to give no hopes of redeeming any of the combs. The bees had dwindled to nothing. I suggested that this was a piece of carelessness on their part, that it was a mistake to return a super to a hive that must have been suffering of the moth at the time when the honey was removed. It was with difficulty, however, that I convinced them that they were at fault, and that it was at all possible to detect the presence of the moth two months ago in a hive which is well-nigh destroyed at this date by them.

There is too much neglect of this kind among many apiaries. We do not sufficiently recollect that the moth becomes more numerous as the season advances. In the spring combs may be left for two or three months without protection and without showing much of the ravages of the moth, because they are then very scarce, having been reduced in numbers by the winter; for it is now very certain that ordinary winters in this latitude kill all but those of the moth which happen to be sheltered in colonies of live bees. The only hives in which they thrive in any perceptible way are those whose bees have died at the close of winter. They have kept a few moths alive, and when they dwindle away no living insect is left in the box but the straggling and rustic moth-worm. The few moths that hatch in spring make a second breed that appears in full force about the beginning of August. If these find suitable lodgings, the third breed will become formidable, for the moths are sufficiently plentiful at that late date to take by storm any hive that may prove destitute of queen or hatching bees. The eggs laid in the early part of September may not all hatch, if the season is cool; but if a warm fall gives them the opportunity they thrive in an astonishing manner.

It is not to be wondered that our forefathers were afraid of the moths for their bees. Until the invention of the movable-frame hive it was next to impossible to ascertain the extent of the danger to the bee-industry on the moth's account, and altho Mr. Langstroth himself was of the opinion, when he first wrote his book, that the moth was but little injurious to a healthy colony of bees, he was compelled, owing to the general opinion then prevailing, to treat of them as "a powerful enemy" of the bee. But he had already divined the true cause of the decadence of colonies in the fall and of the triumph of the moth. He wrote:

"Every year large numbers of hives are bereft of their queens, most of which are either robbed by other bees or sacket by the bee-moth, or first robbed and afterward sacket, while their owner imputes all the mischief to something else than the real cause. He might just as well imagine that the carrion birds, or worms, which are devouring a dead horse were the primary cause of its untimely end."

This argument struck the right chord, and a few years afterward our friend, Elisha Gallup, if I am not mistaken, came out boldly in the American Bee Journal with the assertion that there was no more danger from the moth, for a colony of healthy bees, than there is danger for a healthy cow being destroyed by the grubs, or larvae, or the carrion fly, which is sure to infest every decaying carcass of dead animals during warm weather. This assertion, which may seem too far stretch to the novice in bee-culture, is within the limits of facts. It must have seemed a bold statement in the days of patent moth-traps, but it proves more correct every day.

So we need not fear the moth if we keep our colonies healthy

and strong. The colony mentioned at the beginning of this article was evidently queenless. It is quite probable that in September, when the honey was removed, the bees were sufficiently numerous to make a fair show, but it is also certain that a closer examination of the colony than was given to it while the honey was being extracted, would have brought out the fact that it was fast dwindling, and that the bees were already discouraged. A large number of eggs laid at its door, or on the outside of its combs, during the last days of September by the moths produced the result mentioned.

To this state of things there is no remedy; the proper thing would have been to examine the hives more closely during the summer, to make sure of replacing the failing queens.

The most disagreeable feature of the existence of the moth appears when the first crop of honey has been removed from the hives. If moths are plentiful, and especially if a few of them have managed to invade the bee-house, those nice white sections begin to leak and show traces of their disgusting paths. There is only one way to avoid this. Burn brimstone in the bee-house or under those crates of comb honey once a week, or about, until you may feel sure that the moths have been destroyed. The fumes of the sulphur will not destroy the eggs, and for that reason several repetitions of the fumigation are necessary. The extent of the fumigation needed may be ascertained by the house-flies in the room. A fumigation that will kill them will also destroy the living moths.

To make the burning of brimstone more thorough and more easy, we melt it over a stove, and dip strips of rags or gunny in the molten sulphur. These act as a wick, and the brimstone burns more promptly and more evenly than otherwise.

Hancock Co., Ill., Nov. 27, 1897.



No. 1—Recollections of an Old Bee-Keeper.

BY DR. E. GALLUP.

I will endeavor to show the readers of the American Bee Journal the difference in starting in bee-keeping when I commenced and in starting now. I was born in the year 1820, in what is now called "Canada East," or Province of Quebec, 65 miles north of Vermont, and about 75 miles east of Montreal, on the St. Francis river. I mention this to show you that I was located in a far different climate from California.

From my earliest recollections I took a great and absorbing interest in bees. My father kept a few colonies at different times, but had no luck with them. In those days every success or failure was attributed to "luck." There were no books on bees to be had. In fact, I never heard of such a thing until I was about 23 years old. Father built a flouring-mill and sawmill when I was 15, and by an accident, or my luck, I was installed miller. The mill was located three miles from the home farm, so I coaxed and teased father to let me purchase a colony of bees. He finally reluctantly consented, as he said there was no luck in bees at all.

The ruling price of a colony of bees was \$2.50. There was a widow that I was acquainted with that had a lucky colony. She was very anxious to get some lumber, and I was just as anxious to get her lucky bees, so after bantering with her for several weeks, she finally consented to let me have her lucky colony for \$7.00 worth of lumber, at cash price, which was \$2.50 per 1,000 feet. Well, I moved the bees quick without consulting father, for fear she would change her mind.

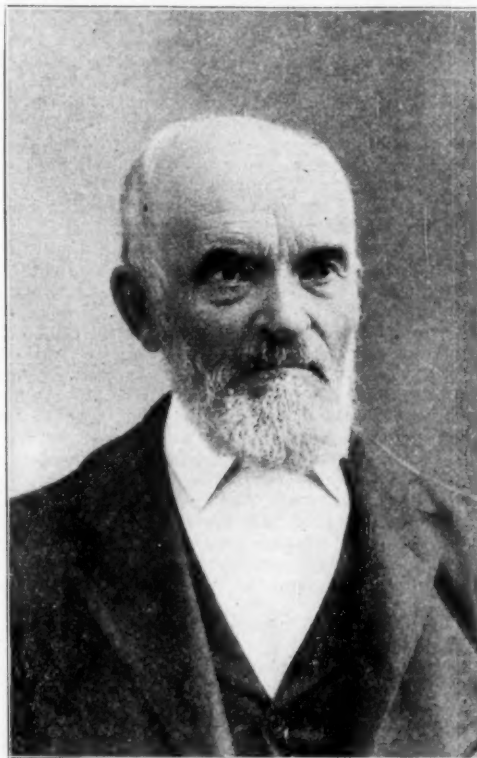
Father was terribly worked up to think that I had been so foolish as to pay such a price for a colony of worthless bees, as he called them, but I consoled myself with the thought that I had not only got her bees, but her luck also. Well, as it turned out, she lost all her bees—some seven colonies—the following winter, and I got two good swarms and a box of about 20 pounds of nice honey. Then didn't I proudly boast of my trade in getting the lady's luck!

My bees all came through the winter in good condition, but the lucky colony always did the best. The idea of luck was never thoroughly established in my noddle, so I began to study the whys and wherefores.

That lucky colony was in an old-fashioned straw-skep, as it was then called, and it being circular and smallish at the top, every comb except one small one at one side was worker-comb. Bees were all wintered on the summer stands, which was usually an open shed facing the south or southeast. They were confined to the hives from the first of November until April 15, or thereabouts, and sometimes until the first of May. No one had thought of wintering bees in a cellar. The straw being porous, there would be no accumulation of frost from the breath of the bees in cold weather in the hive, and we frequently had cold weather, oftentimes 40° below zero for

six and eight days in succession. Then we would lose our bees in box-hives. I lost all but my lucky colony several times. I would shut my box-hives up, all except some small notches cut in the bottom at one side for entrance. My idea was to keep them warm.

I had an aunt get married, and settled across the river from the mill, and she was a great bee-keeper, that is, she could rattle tin pans and ring bells when they swarmed, and compel them to cluster, and then she could hive them without getting stung, etc. Well, she would make hives with a hand-saw, hammer and nails out of rough hemlock lumber, set them on top of a large stump, without any bottom-board, and place a large stone on top to keep the wind from blowing the hive off. The stump being cut uneven, it left plenty of bottom ventilation. Finally, she had one hive that cracked open from top to bottom, and the crack opened fully three-fourths of an inch at the edge of the combs, so we could look right in on the bees. I felt almost sure that colony would freeze to death, so when the mercury would get down to 35° and 40°,



Dr. E. Gallup—From a recent photograph.

I would go over and see how they were getting on. I could hear them roar and hum several rods off. I have stood and watched them many times until I would get so cold that I could stand it no longer.

The bees on the inside of the cluster were all the time rushing to the outside for air, while those on the outside were rushing to the inside for warmth. There was a plain case of manufacturing warmth by activity, or, as we might say, electricity. They were a perfect dynamo. That colony wintered the best in the lot. My bees, that I kept warm, nearly all died that winter.

Orange Co., Calif.

[To be continued.]

Langstroth on the Honey-Bee, revised by The Dadants, is a standard, reliable and thoroughly complete work on bee-culture. It contains 520 pages, and is bound elegantly. Every reader of the American Bee Journal should have a copy of this book, as it answers hundreds of questions that arise about bees. We mail it for \$1.25, or club it with the Bee Journal for a year—both together for only \$2.00.

Every Present Subscriber of the Bee Journal should be an agent for it, and get all others possible to subscribe for it. See offers on page 11.



Sorghum for Bees in Winter.—Fred S. Thorington, in *Progressive Bee-Keeper*, tells of a case in which the honey was taken from a colony, and a single dose of sorghum fed to the bees finished them. In another case the bees' stores were taken and sorghum given, and the bees absconded.

The New Fence with the plain or no-bee-way section, says Gleanings, can be used in old-style T supers or section-holders. All that is necessary is to have the fence or cleated separator made the right size to fit. The company will furnish the right fence to order, and can make them all ready put together at a cheaper rate than one could put them together himself, special machinery being used to glue the parts together.

Prevention of Swarms.—L. A. Asplwall found this year that his hives were too small to prevent swarming by means of perforated dummies, and expects next year to use hives a third larger. In four cases, he secured the return of the swarm, queen and all, by vigorously smoking at the entrance as soon as the swarm began to issue. He thinks the swarm returned because they could not scent the queen.—*Review*.

Bee-Stings for Rheumatism.—Reports as to the effect of bee-stings on rheumatism continue to conflict, some reporting success, others failure. E. W. Moore says his mother, 62 years old, had for years lost the use of her left hand through rheumatism. Last summer, hiving a swarm alone, her hand was badly stung and swelled greatly, but when the swelling went down the joints were no longer stiff, and now she can use the hand as well as ever.—*Progressive Bee-Keeper*.

The Wells' System.—This system of having two colonies in one hive with a perforated division between, seems to be well liked by a few, but not to gain in popularity with the masses. Mr. Loveday, in the *British Bee Journal*, says he gets as much from one double hive as from three single ones; but that one Wells hive makes quite as much work as three single-queened ones. He says: "The more experience I have of this system the more I am convinced that it cannot be generally adopted."

Finding Queens.—The editor of *Gleanings* is asked the easiest way to find the queen in a hive just boiling over with bees. Says there is no easy way. If he doesn't find a queen in twice looking over the frames, he closes the hive and in two hours more takes another look. If he still fails to find her, which occasionally happens with black bees, he puts an empty hive in place of the one on the stand, puts perforated zinc at the entrance, shakes the bees on the ground in front, and if the queen isn't too small she's sure to be caught.

Uniformity of Supplies.—J. W. Rouse, in *Progressive Bee-Keeper*, gives expression to the often needed but seldom heeded advice to beginners, to try to use nothing but standard goods, and not to be in a hurry about inventing improvements. Believes in improvements, yet the inventions he has seen, even those possessing merit, are no better than the regular goods in use. Thinks most bee-keepers who are using odd sizes are doing so just because they got started that way, and would be glad to change into the regular style if it were not for the expense.

A New Way of Transferring, or at least of getting a box-hive colony to occupy a frame-hive, is given by C. Delmotte in *Le Progres Apicole*. June 5 he dug a hole in the ground the full depth of the box-hive that had stood there, put the hive upside down in the hole, covered it with a board, having a hole 12 inches in diameter, and placed on this the frame hive. A piece of comb to serve as a ladder for the bees was placed between the combs of the box-hive, extending up between the frames of the upper hive. Then earth was packed around both hives at the junction. An entrance was made in the frame hive an inch or two from the top at the front, obliging the bees to go in and out there. July 22, finding four frames of brood in the upper hive, he took out the box-hive, filled up the hole with earth, set the frame hive back in

its place and put the box-hive on top, with what brood and bees were in it, no communication being between the two hives. 23 days later he shook down in front of the frame hive all the bees in the box-hive, a young queen having been reared among them, and found in the box-hive neither brood nor honey. Of course the box-hive was then taken away.

Going to the Fairs.—Editor Hutchinson's description, in the *Review*, of the way he travels from one fair to another, makes a page of very interesting reading. He has his traps and calamities all with him in a freight car, in which he sometimes spends two days and two nights, but when it comes to being jounced off the car floor at night and being obliged to hold on your vitals while they're cooking on an oil-stove to keep them from being jigged or jerked off, one might prefer to stay at home with cross hybrids so as to have a civilized meal and a stationary bed.

Fence Separators.—S. Brautigam, in *Progressive Bee-Keeper*, says the fence makes a good, strong separator, the objection, however, is the time it takes to put together, a minute to each separator. (That needn't matter, however, if they are sold ready made up, and if the price is low enough.) He proposes to avoid the necessity for using them by having sections made with the usual inset, and then have a thin saw-cut on the outside of the $1\frac{1}{2}$ inch section, say $\frac{1}{4}$ inch from the edge, and $1/16$ or $3/32$ inch deep. Then when the section is filled, a knife will split off the $\frac{1}{4}$ inch, and you will have the no-bee-way section.

Rearing Queens on a Stick.—A. E. Dewar, of Australia, gives in *Gleanings* his plan of rearing queens. Cells are made after Doolittle's plan, a small quantity of royal jelly inserted, then a larva from choice stock. The frame with the cells is put in the upper story of a colony whose queen is kept below by a double honey-board, and when about ready to hatch the cells are given to nuclei. The same colony is kept at work starting the queens all through the season, fed at any time honey fails, and liberally supplied regularly with hatching brood, and 90 per cent. of the cells are accepted; 18 to 20 cells are generally put on one stick, but as many as 27 in one lot have been accepted.

Sweet Clover.—The October number of the *Busy Bee* was a sweet clover number, and it seems Editor Abbott could not stop all of a sudden, so quite a bit about sweet clover is found in the November number. Wm. Belshaw says: "As a bee-plant it is one of the best, equalling white clover in quality of flavor, doubling it in quantity on the same amount of ground covered, and it appears to possess the rare quality of being stored away as surplus honey rather than stimulating swarming." The editor thinks the last item valuable from the standpoint of the bee-keeper. But isn't the same thing true of buckwheat, or of any plant that comes as late as sweet clover?

Use and Abuse of Foundation.—Editor Hutchinson refers in the *Review* to the discussion in these pages concerning foundation by Deacon, Dadant and "Sage-Brush," copying the articles of the two latter, and then gives his own views by quoting a chapter from his book, "Advanced Bee-Culture," in which he finally sums up:

"If the bee-keeper lives where the honey-flow is light, but perhaps prolonged, he will find it more profitable to allow his bees to build their own combs. If he can't get perfect brood-combs, he certainly can allow bees to build their combs for the surplus comb honey. If honey comes in 'floods,' as it sometimes does in some localities, the man who allows his bees to build their store combs unaided at such a time, loses dollars and dollars."

Do Bees Freeze?—Asked whether bees may not freeze to death outdoors when the mercury sinks to 30° below zero, Doolittle says in *Gleanings* they may starve but never freeze. A small cluster may freeze, but not a whole colony. Quinby said that the bees inside the cluster, on a zero morning, could fly as readily as in July, should the cluster be suddenly thrown apart. Gallup, when in upper Canada, said, "The thermometer for 60 days in succession was not above 10° below zero, and for eight of these days the mercury was frozen; yet my bees, in box-hives, with a two-inch hole at the top, and the bottom plastered up tight, came through in excellent condition." (*American Bee Journal*, Vol. 5, page 33.) Doolittle finds in the hive, with the bulb of the thermometer touching the outside of the cluster, a temperature of 45° to 46°, and in the center of the cluster, 63° to 64°, when it is 10° to 25° below outside.

CONVENTION PROCEEDINGS

Report of the Northwestern Bee-Keepers' Convention, Held in Chicago, Nov. 10 and 11, 1897.

REPORTED BY A SPECIAL BEE JOURNAL REPORTER.

The assembled bee-keepers were called to order at 10:45 a.m., in the New Briggs House, Chicago, by George W. York, who had issued the call for the meeting. Dr. C. C. Miller was then chosen President, after which Mr. York was selected as Secretary.

On motion of Jas. A. Stone, a committee was appointed to draft a constitution and by-laws for the consideration of the meeting. Motion carried, and Messrs. Jas. A. Stone, Herman F. Moore and George Thompson were appointed.

During the meeting the following had their names enrolled as members, not all present, however, uniting:

M. M. Baldridge,	Dr. C. C. Miller,
E. J. Baxter,	M. S. Miller,
Dr. H. Besse,	Herman F. Moore,
Miss Mathilda Candler,	John Nau,
Stoughton Cooley,	W. H. Norris,
P. W. Dunne,	H. A. Rittenhouse,
J. D. Everett,	Rev. H. Rohrs,
Jas. Forncrook,	E. F. Schaper,
Jas. A. Green,	C. Schrier,
D. S. Heffron,	W. N. Smith,
Chas. Karch,	W. H. H. Stewart,
A. H. Kennan,	Jas. A. Stone,
L. Kreutzinger,	George Thompson,
W. C. Lyman,	J. C. Wheeler,
C. E. Mead,	E. Whitcomb,

George W. York.

As had been the usual custom of conventions held in Chicago, the hat was past by the Secretary for the collection of questions for discussion. The first one read by Pres. Miller was this:

THE DIVISION OF LABOR IN THE HIVE.

"What is the division of labor in the hive, that is, the proportion of field-bees, nurses, sentinels, etc.?"

Pres. Miller—I don't think that is a question we should spend much time on.

Mrs. Taylor—I am responsible for that question. I am a novice in bee-keeping. It is a question that has interested me very much, and I have not found any books that have given me any light on the subject, and I thought possibly some people here might answer it in a few words.

Pres. Miller—It is a proper question, but one we should not spend much time on. We have our text-books and bee-papers that cover certain ground, and when we come here we take the ground they don't cover. Suppose I make a statement about this. In the first place, I don't know much about it. In the economy of the hive there are those different divisions—the field-bees, the nurses, etc. I very much doubt if there is a separate class as sentinels. There are those who do the home work, and the sentinels are amongst them. I think the nurse-bees and the sentinels are the same; they do the work of the hive up to 16 days, usually, but under stress these nurse-bees will go to work as field-bees much earlier. I have seen them at five days old doing field-work, and I know the old bees will do nurse-work if there are no young bees in the hive, but as to the proportion, the proportion of nurse-bees will be, in the earlier part of the season, very different from what they will be later; as they go on the nurse-bees will increase very rapidly up to about the time of the harvest, then they get maximum, and after that the field-bees will increase; that is a very rough statement, and there is not much information in it, and may be it is not true; correct me if it is not.

Mr. Stone—It seems to me that that is altogether according to the amount of brood there is in the hive to be kept warm, to use it plainly; and sometimes, when there is a hive full of honey, and only a little brood, it does not take as many bees to keep the brood warm as it does at other times. Of course, as you say, it is a good deal owing to the weather. I have noticed where the weather is very hot, if the bees are

not doing much work, they go out of the hive because it is too warm, and then they certainly don't need many nurses; but in the cold weather, at the beginning of the season when their heat is needed in the hives, I think there is always enough stay in there to keep the heat, and the others go out and do the field work.

Mr. Baxter—I have kept about 250 colonies for the last 20 years, and my experience is that you cannot tell definitely at any time how many or in what proportion—it depends upon the weather and flow of honey. When the weather is warm they often go out of the hives because it is too hot. Different conditions have got to be taken into consideration. I don't believe any one answer will answer the question for all.

Pres. Miller—One point I am waiting for somebody to bring out is this: As it is now, the nurse-bees depend entirely upon the amount of heat that is needed to be kept up in the hive; you are leaving out altogether the number of brood to be fed; that I think controls it very largely. If it is warm, they will go outside, it is true, and no matter how hot it is there must be nurse-bees enough to do all the work that is in there, so you must take that along with the heat of the hive.

LEGISLATION TO PROTECT AGAINST ADULTERATION.

"What legislation is needed to protect consumers against adulterated honey?"

Pres. Miller—How many of you think that legislation is needed at all with regard to it? Hands up. (7.) How many think there is no need of legislation? (3.) As I understand the question, it is, What legislation is needed? It depends something on what the kind is.

Mr. Dunne—It seems to me we ought to have legislation from Congress, exclusive of the State, because Congress could naturally control the correction of all abuses, and legislation from Congress would naturally send it back from the States, and we would have still further legislation. I think that is a very important factor with regard to any man who produces honey.

Mr. Baxter—I believe with Mr. Dunne, that we need National legislation. I hope that this association is not going to put itself on record as did the National Association. If you remember, during the Columbian convention there was a measure before Congress known as the "Paddock Pure Food Bill." I moved to endorse the passing of that Bill, and I believe it was referred to a committee to report back, and strange to say they fought my resolution, and failed to report back. It went by default. The proceedings of the association still show that much of it, and I think the society made a big mistake. We should take strenuous measures of all kinds against adulteration; we ought to have National laws; one State will prohibit, and another State, to make money out of it, will allow it; all those laws should be National.

Mr. Stone—I was going to ask Mr. York to report what he thought of our law that we had past last year in our legislature, with regard to pure food. It covers all food. As Mr. Baxter spoke of their shipping it from one State into another, our law does not allow it even to be sold if there is any ingredient that enters into any food that makes it impure. It contains a severe penalty.

Mr. Dunne—The beef exported, pork exported, all goes under the microscope, and is thoroughly examined by the Government; if there is an inspector at all, in the principal markets in honey, this thing could be stopt, because it would have to be analyzed. You take it in the English ports—everything that goes in there is examined, analyzed; every class of goods goes before the chemists, and is thoroughly examined at the expense of the Government, and the Government has the right to protect the farmer if he protects any one.

Mr. Moore—I feel very deeply interested in this question, because I have been in this market six years, selling honey to consumers. Illinois is all right; it doesn't need anything. I think the extreme penalty for violation of the law is up to five years in the penitentiary, and it requires the ingredient, if not pure, to be printed upon the label in every case. The law is very stringent in Illinois, but as any one knows, who knows anything about politics, it enters in all these markets, and it becomes finally a question whether it will be enforced. The law is strict enough, if it could be enforced. The General Government should take hold of it; it seems to enforce its laws more impartially than the local laws. I believe that that is the only remedy for adulteration. Adulteration is a great damage to every bee-keeper, and I can tell you so from my own experience. I askt one of the prominent citizens of Chicago, who has paid me considerable money for honey, "How much more honey do you buy than if you went to the store and bought it?" He replied, "Four or five times as much." My honey is pure honey; I tell them so, and get an order instantly. It means four or five times as much honey sold, if

people could understand the honey they get is always pure honey.

Pres. Miller—Let me tell you one thing as an illustration bearing upon this point. I live in a little town that has been without saloons for more than 30 years, but liquor is sold in it on the sly. Those who sell liquor have no permission from the town or from the State, and they are doing a crime when they are doing it. They don't take the trouble to look out for the State or town, but they do look out for the General Government and get a United States license; they are criminals in the eyes of the State law, but in the eyes of the General Government they are law-abiding citizens; in that case, at least, the General Government has a power, and law breakers are afraid of it; they are not afraid of State or county laws, or town laws.

Mr. Baxter—I was in Iowa last winter, and saw some very nice, presumably honey, in pound glasses. I asked the wholesaler if he didn't want to buy a barrel of honey at a low price, pure honey. I told him I had seen some of his honey in pound glasses in a grocery store. He said, "That is not honey." I told him he had it labeled "pure white clover honey," and that he was doing a wrong to bee-keepers and the public, and he said, "Everybody does that." I told him the first thing he knew we would have proceedings instituted against him for obtaining money under false pretenses. "I don't believe you can do that in Iowa," he said.

Mr. Stone—I would like to ask Mr. York if the United States Bee-Keepers' Union is not likely to take hold of honey adulteration, especially in the city of Chicago, and apply the State law, and make it effectual?

Mr. York—Yes, they will, just as soon as we have sufficient funds to begin operations, and that is all we are waiting for—for a sufficiently large membership (which means sufficient money in the treasury) to warrant us in going ahead. The laws of Illinois are sufficiently strong, I think, to stop adulteration if they are once enforced. I think we are indebted to Mr. Moore for resurrecting the laws, and I should judge from the reading of them that they were all we need to stop adulteration in this State. I, for one, should like to see them enforced, and am very well satisfied that just as soon as we have a large enough fund in the treasury of the United States Bee-Keepers' Union we will begin to make an attempt to enforce laws against adulteration of honey in this State as well as elsewhere.

Mr. Baxter—Your law is a failure, if that is the case—if you have to have funds provided. You have a prosecuting attorney here—can't you proceed under that? If you have to have private funds to prosecute criminals, I think the law is a failure.

Mr. Dunne—This question brings us back to the fact that it is the United States that has a right to be at the expense of enforcing the laws; they do with the distilleries. Has not the honey-man the same right to have the protection of the United States that the distillery has? Is Mr. Armour to be protected by having his pork analyzed and branded by the United States Government as pure, and the honey-man to have no protection? It only requires an effort on the part of the bee-keepers of the United States to enforce the law, and you will have the same right as other citizens, because the Government has the right to protect this industry as well as any other industry. We are all citizens alike, and if honey can be adulterated the same as whiskey, they owe us the same protection. The distillers don't amount to 500 all over the United States, but the bee-keepers amount to thousands, and I claim it is the duty of the Government to protect this interest as well as any other. It will be our own fault if we don't get legislation that will protect it. The Government puts the stamp of the purity of the whiskey on the bottle; that is in the interest of the distiller and the Government; and the Government can have an office here just the same; put a tax on to pay for it, and let there be a depot and have honey inspected; then you will get value for pure honey.

Mr. Karch—I don't think Mr. Dunne makes the proper distinction between whiskey and honey. Adulterated honey will not kill quite so quickly as whiskey. (Laughter)

Mr. York—I would like to say one more word in referring to what Mr. Baxter said, that we ought not to be compelled to spend our money to enforce State laws. I don't think that we need to spend the money for the purpose directly, but we must be to some expense to have our General Manager and Treasurer come on the ground, to engage an attorney to start the case, to look after samples, to have them analyzed, etc. That all costs something. Still, if it were known that the United States Bee-Keepers' Union has a good fund back of them, and that they propose to fight this thing through, we might not have to spend our money to enforce State laws, but it is a good thing to have it on hand. I presume we could get

the prosecuting attorney to take hold of it, but there would be some expense to start the suit; at least that is the way I understand it. I am not an attorney, but I understand there would be some expense in beginning suits of that kind.

Mr. Moore—I am perfectly familiar with legal matters here in Chicago. I will tell why it is necessary to put up the money. There are 500 prisoners in the county jail, and Mr. Deneen (the State's Attorney) is in duty bound to get those 500 men out of jail or into the penitentiary as soon as possible. In the second place, whenever railroad men want a scalper sent to the penitentiary, they hire Attorney Forrest, or some other eminent attorney, at great expense. I could name many other instances. It is the State's attorney's business, of course, to do this, because it is the people's prosecution, but he is so busy, and the question of politics may come in; he does not have time, so it seems to be an absolute necessity to raise some money, \$1,000 at least, before anything adequate can be done in Chicago. This \$1,000 is to pay for the expense of getting samples of honey, and paying an attorney to do it. I would like to hear from Mr. York a little further.

Mr. Baxter—I think if we had a United States pure food law under the supervision of the Department of Agriculture, or under the Internal Revenue Bureau, if there is a tax to be assessed (altho I don't favor that), I think we would be very apt to get justice more speedily, and it would be general.

Pres. Miller—Do you want to take any action upon this, or shall we pass on to the next question?

Mr. Baxter—I would introduce a resolution that it is the sentiment of this association that a United States Pure Food Bill be past by Congress.

Motion seconded by Mr. York.

Mr. Baxter—I should say we are not prepared to draft such a Bill now. I think the proper way would be to refer that to the Executive Committee of the United States Bee-Keepers' Union. I think they would have better recognition than we would.

Mr. York suggested that we recommend that the General Manager of the United States Bee-Keepers' Union draft a proper Bill to be past by Congress, and moved this as an amendment to the former motion, to which Mr. Baxter assented.

Mr. Baxter—My motion is that it is the sentiment of this association that we have a United States Pure Food Bill, and that we recommend the Manager of the United States Bee-Keepers' Union to draft such a Bill as regards honey, at least.

Mr. Dunne—Who is going to draft this Bill? Where is it to go?

Pres. Miller—As it now stands it would be referred to the General Manager of the United States Bee-Keepers' Union, and I think that you would find that he would do his level best.

Mr. Dunne—I would like to add in that recommendation that we recommend that all adulterated honey be seized and destroyed forthwith.

The motion was then carried unanimously.

(To be continued.)

A New Binder for holding a year's numbers of the American Bee Journal, we propose to mail, postpaid, to every subscriber who sends us 20 cents. It is called "The Wood Binder," is patented, and is an entirely new and very simple arrangement. Full printed directions accompany each Binder. Every reader should get it, and preserve the copies of the Bee Journal as fast as they are received. They are invaluable for reference, and at the low price of the Binder you can afford to get it yearly.

The Alsike Clover Leaflet consists of 2 pages, with illustrations, showing the value of Alsike clover, and telling how to grow it. This Leaflet is just the thing to hand to every farmer in your neighborhood. Send to the Bee Journal office for a quantity of them, and see that they are distributed where they will do the most good. Prices, postpaid, are as follows: 50 for 20 cents; 100 for 35 cents; or 200 for 60 cents.

The Names and Addresses of all your bee-friends, who are not now taking the Bee Journal, are wanted at this office. Send them in, please, when sample copies will be mailed to them. Then you can secure their subscriptions, and earn some of the premiums we are offering. The next few months will be just the time to easily get new subscribers. Try it earnestly, at least.

See "Bee-Keeper's Guide" offer on page 14.

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Volume XXXVIII of the American Bee Journal is now begun. Just two more years, and then the two-secre volume will be commenced. Then it will have been a weekly just as long as it was a monthly bee-paper. But 38 years seems a long time for a periodical to exist—it is especially so in bee-journalism, for about all that have been started in this country past away at a very tender age. Perhaps it was just as well, as they may have in most cases served their purpose, in satisfying the desire of their publishers to "have their say" unchecked, and see their names in print as "editor." But how empty are such privileges and honors. To publish a really valuable bee-paper means more than to wield a free lance and print "editor" after your name. It means a lot of downright hard work, with no prospect of a financial fortune at the end. But, to us, the work is pleasant and agreeable, even if prodigious, so long as we are blest with good health.

Against Adulterated Honey in Wisconsin.

—We learn from Mr. F. Wilcox, the able President of the Wisconsin State Bee-Keepers' Association, that on Jan. 1, 1898, the new anti-adulteration law, which is very stringent, went into effect. Mr. Wilcox wrote us as follows Dec. 20:

EDITOR YORK:—I will enclose you herein a clipping from the Evening Wisconsin, of the 13th, which shows that the State of Wisconsin is making an effort to suppress the adulteration of food and drugs, and I think the Governor has found a man who will enforce it, in the person of Hon. H. C.

Adams, whose office our society occupied last February, when you were with us.

Very truly yours,

F. WILCOX.

The clipping which Mr. Wilcox sent us is headed, in large type, "Food Must be Pure." It contains a full text of the new law on adulteration, which was approved April 2, 1897, and also a number of rulings of Commissioner Adams. Under "Honey" we find the following:

"Honey containing glucose or any other foreign substance shall be marked upon the package or parcel with the words, 'Adulterated Honey,' as required by Section 2, Chapter 40, laws of 1881. No honey mixtures or compounds will be permitted, except when labeled in accordance with the foregoing section."

Hurrah for Wisconsin! Go for the infernal adulterators of honey! Down them, and make them quit or get out. We hope the bee-keepers of that State will back up Commissioner Adams in his efforts to enforce the law. He'll have a job of it for awhile, and will need the hearty co-operation of every honest citizen. Now is the golden opportunity of bee-keepers there to rid that State of the honey-adulterators.

Oh, that Illinois were as quick to defend and protect her producers of honest honey. But we're expecting shortly to have something very interesting to tell along this line here in Chicago. Honey adulteration here is more general than ever, and more daring in its devilish work.

Honey-Vessels in Foreign Countries.—Ph.

J. Baldensperger says in the British Bee Journal that in most countries on the continent except Turkey and Greece, wooden barrels are used for holding honey. In Turkey and Greece goatskins are used, giving a peculiar and not agreeable flavor to honey. In Syria, Palestine, and over the north of Africa, unglazed pottery is used, the honey soaking into the pores so the vessels cannot be used the second time, but in Algeria glazed pottery is used. Mr. Baldensperger uses kerosene cans, after cleansing them. This he does by exposing them to the sun for a fortnight, or washing them with lye, "and, when well dried, a few drops of spirits spread over the surface and ignited with a match, and the can becomes as clean as new, without the slightest trace of petroleum flavor." But such cans are strongly objected to in this country.

Bees vs. Pigeons as Message-Carriers.—Mr.

A. Maebert, a New Jersey subscriber to the Bee Journal, has kindly sent us an account of an hour's contest between homing pigeons and bees, in which the bees won the race. It was in Belgium, where the speed between four drones, eight working bees, and the same number of pigeons, was tested. They were liberated at a town one hour's distance from the hives. The bees were covered with flour so as to recognize them when they reached the hive. The bees and pigeons were all liberated together. A drone reached home four seconds in advance of the first pigeon. The three other drones and one pigeon came in neck and neck, according to the judges, and the eight worker-bees came in just a trifle ahead of the ten pigeons.

Mr. J. M. Young and Apiary are shown on the first page this week. When sending us the picture, Mr. Young wrote as follows:

Our photographer came out early in May and took the picture that I send you. The hives all face the east. The trees in the background are box-elders, and on the north side of the yard. The residence is situated at the extreme left, and, sorry to say, we could not show it in the engraving.

The large white hives are chaff hives, and all two-story. The smaller hives are the two-story regular dovetailed, and used mostly for extracting purposes. My name at the left is worked out in honey-comb, and is the same one that was sent with the advertising train that went from Omaha across the

continent a few years ago. I have also had it on exhibition at the Nebraska State Fair, and at our county fair a time or two.

□ The small hive in the foreground with a handle is a shipping nucleus hive, used to ship nuclei in. They go by express just about like a traveling man's grip-sack.

J. M. YOUNG.

It will be very appropriate to add right here that Mr. Young just recently—Sunday, Dec. 19—took unto himself an aparian helpmeet, in the person of Mrs. Martha E. Palmer. Life now will likely be sweeter than ever to our "Young" friend. The newspaper item announcing the "tie-up," closed with this paragraph:

"The happy pair are both well known and highly esteemed in this community, where they have resided for years, and their many friends will wish them a joyous and successful voyage on the matrimonial sea."

Yes, when things get *too* quiet they can let loose a few healthy bees to liven up the "voyage," and help themselves to the honey from their own hives to sweeten the sour places.

No "Injustice" Whatever.—Dr. C. C. Miller sends the following in reference to a statement contained in the article by Thomas G. Newman, published recently:

On page 807 (1897) Manager Newman says: "Dr. Miller's retraction is all right. But had I not learned of the statement having been made that the National Bee-Keepers' Union had given no aid to Dr. Besse—what an *injustice* would have been done!" If Mr. Newman had full knowledge of all the circumstances he could hardly think so. It must be remembered that Dr. Besse was *present* when the matter was mentioned, and that I referred to him to know what were the facts in the case. Of course, *all* present heard his reply, so I think Mr. Newman can see that no injustice could be done to him in the mind of any one present, and that his hearing of it could not change the least what any one present thought.

C. C. MILLER.

Exactly so. The convention report will show, when it appears, that Dr. Besse *then* and there corrected Dr. Miller's erroneous impression regarding the Union's aiding Dr. B. in his suit. Of course no "injustice" could have resulted under the circumstances. It now looks very much to us that there was some one present who wanted to stir up trouble, and so made a donkey of himself by reporting a thing that has simply resulted in "much ado about nothing."

The Grading of Comb Honey is a subject that *must*, sooner or later, be taken hold of in good earnest, and something definite be done about it. We were looking at some comb honey on South Water street recently, and were told that it was "fancy." It did look so, judging by the front row back of the glass. But we wisht to see the inside of the case, and upon opening it we found unfinished, dark-colored combs that never should have been sent away from home at all.

We then thought, Why will any one who calls himself a bee-keeper sort his honey in that way? Is it possible that he knows no better? If we knew the producer's name we should be tempted to publish it. He deserves to be held up in some way so that he will never repeat his inexcusable blunder.

But there are many other honey-producers just like that one. He is by no means alone in his careless—shall we say dishonest?—sorting or grading. Only the very finest and whitest, best filled and cleanest sections of honey find ready sale these days. There is no need to expect any kind of satisfactory price for inferior and dark grade of comb honey, at least in this market.

Our opinion is that only the very best of any farm produce is good enough to ship to market. Only on such goods can the highest prices be realized.



"'BEEDOM BOILED DOWN' is the heading of a most excellent department in the American Bee Journal." So says Editor Hutchinson in the Review. He ought to be a good judge of such things.

MR. JOHN BODENSCHATZ, of Cook Co., Ill., recently sent us a picture of his neat little apiary. Mr. B. is a very young bee-keeper, but he is on the way toward making a good one. He no doubt will be heard from later.

MR. C. H. CLAYTON, is now manager of the California Bee-Keepers' Exchange, we learn from the Pacific Bee Journal. Since his selection, it is said that "a number of cars of honey have been moved at very good prices, white extracted bringing 4½ cents per pound."

MESSRS. CHAS. DADANT & SON, writing us Dec. 21, and referring to the new year, said:

"This makes our comb foundation business 'of age,' and our settlement here 34 years. We are getting to be 'old settlers.'"

MR. A. MIDDLEBROOK, of Lenawee Co., Mich., wrote us this when ordering a supply of the pamphlet, "Honey as Food," after having examined a sample of it:

"'Honey as Food' I believe to be just the thing. Without any flattery to you, I must say it is well gotten up."

MR. HARVEY FEATHERS, of Waupaca Co., Wis., writing us Dec. 28, said:

"I have taken the American Bee Journal ever since it has been printed weekly, and like it very much."

As the Bee Journal was changed from a monthly to a weekly Jan. 1, 1881, Mr. Feathers has been reading it just 17 years. He should be competent to speak of its value to a bee-keeper.

MRS. MATE L. WILLIAMS, of Wadena Co., Minn., has kindly mailed us a generous sample of the honey which we referred to awhile ago, and which she calls "the finest in the world." It is fine. We never tasted finer flavor, for a light amber honey. And for body—well, we never saw any honey so waxlike. Not beeswaxlike, but just waxy and stringy. Mrs. Williams may well be satisfied with her honey, and her local customers ought to be many and admiring. Thank you, Mrs. Williams, for your kind remembrance.

MR. E. S. LOVESY, of Salt Lake Co., Utah, lately sent to us two sections of comb honey and a pint Mason can of extracted. We believe that all was the whitest honey we ever saw, and it was also exceedingly thick and rich. We imagine it was sweet clover mixt with alfalfa, which made a delicious honey, indeed. For such honey there ought to be large demand and ready sale. We wish to thank Mr. Lovesy for his thoughtfulness and generosity. But it's just like those Utah people. It's a way they have. So our brother reports, who had been spending a month in Utah, and brought the samples of honey to us.

MR. J. W. SOUTHWOOD, of Huntington Co., Ind., in an article in Gleanings, had this very complimentary paragraph in reference to our new department of "Beedom Boiled Down:"

"It occurs to me that the one who boils down 'beedom' for the American Bee Journal must stand by nearly all the time and stir, as it seems to be boiled down pretty thick, and yet not scorcht."

You are quite right, Mr. Southwood, for—

The Boiler boils and also stirs
The stinging, seething mass;
Then skims it oft, and still avers
'Tis yet but second-class.

QUESTIONS AND ANSWERS

CONDUCTED BY

DR. C. C. MILLER, MARENGO, ILL.

[Questions may be mailed to the Bee Journal, or to Dr. Miller direct.]

Golden Italians and Adel Bees.

1. Last season I purchased a "golden" queen from a Southern breeder, thinking I would get something fine in color, but her workers are but a trifle more yellow than my hybrids. Would you consider her a pure-bred 5-bander?

2. Is there such a thing as a real yellow worker? If so, where can I get them?

3. Are the golden workers as good honey-gatherers as the common Italians?

4. What do you know about the Adel bees? Are they a superior race or strain?

AU.

ANSWERS.—1. Hardly. Of course it makes a difference whether it was a tested queen or a dollar queen. In the latter case you have to take the risk as to her mating, and if she met an inferior drone you might expect workers accordingly, altho some of them ought to be yellow. Possibly it may be well to mention that often there is a possibility of there being another queen in the hive, your yellow queen having been killed. If you had clipped her, it would be easier to detect any such occurrence.

2. Yes, there are workers that are as yellow to the tip of tail as the pure imported Italians are for the first three bands. I think G. M. Doolittle originated such a strain, and they can be had from him and others.

3. I think that's a good deal like asking whether a red cow is as good a milker as a black one. There are good and poor cows of each color. There are good and poor bees among the regular Italians, and so there are among the 5-banders.

4. Practically, I know nothing about them.

Using Old Combs or Foundation in Transferring.

Would you fasten old combs into frames in transferring, or would you transfer onto full sheets of foundation?

OHIO.

ANSWER.—It will make a nicer job, and perhaps more satisfactory in the long run, if you use the foundation. If, however, you transfer at a time when there is much brood in the hive, it will be advisable to save all comb containing worker-brood. There's no objection to your filling frames with worker-brood as far as it goes, and then having the rest of the frames filled with foundation.

A Beginners' Questions—Some Good Advice.

1. Please name plants which are especially adapted for honey, and of whom could I get the seed?

2. Describe a queen-cell, what part of the comb it is on, and about what size it is.

3. How can I tell brood which is fit for queen-rearing? Will uncapt brood do?

4. Will brown or black bees make any difference with the blood of a queen if eggs from a tested Italian queen are given them to rear a queen from? or must I have Italian bees?

5. I have a weak colony of Italian bees, and I do not wish to double them up. They seem to be on top of the frames some. Could I not give them some meal on a thin board over the cluster, and also feed them honey or syrup to cause the queen to lay? They are in the cellar: I think it is about the right temperature for increasing.

NEW YORK.

ANSWERS.—1. It would take more room than can be given in this department to name all the honey-plants, and it would be well for you to get a text-book on bee-keeping, which would give you much information on this topic and many others. Get a bee-book, by all means. Among the best honey-plants are white clover, white sage, linden, sweet clover, Alsike clover, buckwheat, raspberry, Spanish-needle, heart's-ease, etc. The seed of those which are raised from seed may be obtained of seed-dealers almost anywhere.

2. A queen-cell may be found anywhere almost in a hive,

oftener at the lower part of the combs, and looks very much like a peanut, and pretty much that size, altho some cells are very inconspicuous, especially if by accident or otherwise the bees have lost their queen. You're not likely to make a mistake in recognizing a queen-cell the first time you see it.

3. Bees can rear a queen from eggs or from very young brood. Some say the brood or larvae should not be more than 24 hours from the egg, and that's perfectly safe, altho the same food is fed to both worker and queen for the first three days, so if the bees start with a grub or larva not more than three days old it is hard to see how it can be any better to take a younger one.

4. Scientists are not entirely agreed whether it makes any difference what kind of nurse-bees rear a queen, but in actual practice it is not generally supposed to make a difference. Get your eggs or larvae from the right queen, then use any nurse-bees that are handy.

5. Now, look here, don't you try to rear young bees in winter. Let those bees die a peaceful death if they must die, and very likely they must if they're very weak, but don't stuff them with meal and syrup and things, to hasten their departure by giving them the diarrhea. Better change your mind and quietly lift the frames with the bees and put them in a hive with another colony, if you think they're too weak to come through as they are. But be sure you'll not make them stronger by trying to get the queen to lay in the winter. Instead of taking time to fuss getting the queen to lay, take the time to study a bee-book.

Giving Ventilation in Summer.

I have 150 colonies of bees. Nearly all of them were badly damaged last summer by the combs melting down. I had shade-boards on top and the hives raised off the bottom-board in front one inch.

Next spring I will bore a large hole in each end of the hives, and cover the same with wire cloth; also face each hive to the northwest, and put up an extra board to shade the southwest side. Can you give me a better plan, or suggest an additional remedy?

WESTLEY.

ANSWER.—Have you no trees? Under the shade of a tree with free access from all sides for the air, there ought not to be much trouble if the hives are not shut up too close. Possibly your hives are close to buildings, high fences or something of the kind that doesn't allow the air free play. Raise the hive not only in front but all around. It will help matters a good deal to have the hive raised an inch on all four sides. Don't put wirecloth on the holes you make, for the bees will shut them up with bee-glue. If the holes are not opened till after bees have been flying well for some time they will not be used as entrances, and perhaps it would be no harm if they should be so used. Instead of making holes, perhaps you'd like this better: Move the second story forward so there will be an opening of $\frac{1}{4}$ or $\frac{1}{2}$ an inch between the two stories at the back end. You may also move the cover so there will be an opening at the top. But this wouldn't do for comb honey.

Hive-Ventilation in the Cellar.

Speaking of cellar hibernating of bees, C. P. Dadant says: "Bees should be given a certain amount of upward ventilation," meaning, I take it, an opening of some sort at the top of the hive. I believe some say no top ventilation to the hive is desirable, as it takes off too much heat. I have 19 hives in the cellar, raised $\frac{1}{2}$ inch off the bottom-board all around, but with the tops tight, as propolized by the bees. I aim to maintain the temperature at 40°, keeping the air pure. I would like some further opinion on top ventilation to hives.

MINNESOTA.

ANSWERS.—It's right to have a certain amount of ventilation. It's right to have the tops of the hives sealed up tight as a drum. It's right to have the tops entirely open. It's right to have the bottoms entirely open. It's right to have the bottoms entirely closed. This is a free country, and you can do almost any way you like. But you can't have the hives entirely closed both top and bottom. Not unless you want to kill the bees. Before I had any movable-frame hives, I wintered bees in box-hives in the cellar, and they were turned upside down. That left them entirely open at the top, and entirely closed at the bottom. Later I wintered bees in frame hives in the cellar, with rather small entrances, and with an opening at the top at the back end nearly as much as the bottom entrance. Later still, being less trouble, I left the

tops sealed tight, and gave a large entrance below. Either way is right. A few general principles must, however, be kept in mind. The air in the cellar must be kept good, for good air cannot be gotten into the hives if there's none in the cellar. There must be provision in some way for change of air in the hive. There should not be a strong draft through the hive. If the top is sealed tight there must be very free access for the air below, or the bees will suffer. It's an easy thing to have a hive closed up so tight that the bees will suffer for want of good air. If the air of the cellar is pure, of the right temperature, and there is no draft, it would be a hard thing to have a hive too open. Under such conditions a colony would probably winter well without any hive around it at all. As your hives are arranged, if dead bees are not allowed to clog any part, they ought to be not far out of the way, but a little more open wouldn't hurt.

You say you aim to keep the cellar at about 40°. Are you sure it wouldn't be better to have it a little warmer? The bees will try to keep the outside of the cluster somewhere in the neighborhood of 50°. If the cellar is 10° below that the bees must consume honey to raise the temperature, and if it's only 5° below they'll not need to eat so much. Generally it is considered that 45° is not far out of the way. But the best thing for you to do is to see at what point with your thermometer (there's a great difference in thermometers) the bees will be the most quiet. If they're more quiet at 40° than at 45°, then keep them at 40°.

A Question on Management.

On page 795 of the American Bee Journal for 1897, do I understand you to say that when you place the supers on the two-story hives, you would take the lower story away? Then what I want to know is, what would you do with the brood in the combs of that story? INDIANA.

ANSWER.—Sometimes there will be 10 or 12 frames of brood in the two stories. If there's brood in only one story, there will very likely be only six frames, possibly five. When the one story is taken away from a colony that has more than eight frames of brood, it is left with eight frames of brood, and any colony that has less than eight frames containing brood has its deficiency supplied, so as to make every colony in the apiary have that number. If there are any frames of brood left, and they are not wanted immediately for any particular purpose, they are piled up on one of the weakest colonies, making it three or four stories high, and if one pile will not take them all, then more piles are made. These piles are convenient to draw from when brood is needed, to make new colonies or for any other purpose.

Partnership Bee-Keeping.

What would be a proper division of income of 100 colonies of bees, where one person furnishes the bees and all necessary supplies, and the other person does all the work connected with or necessary in caring for 100 colonies, and a third party acts as superintendent or instructor? What we want to know is, what should each person receive as his part of the gross income from the honey crop, the party owning the bees getting the increase from swarming? NEW MEXICO.

ANSWER.—I don't know. Especially dense is my ignorance regarding the compensation or share the man should have who acts as instructor. If he should only give a passing word of advice now and then to a man who knew about as much as himself, he would not expect to get anything. If the man who took care of the bees knew so little about the business that the instructor had to be on hand all the time during the working season, he might hardly be satisfied with half the proceeds.

The other part is not so difficult, and yet circumstances vary so much that each case should be considered by itself. Perhaps in general, agreements are made to have an equal division between the owner and the apiarist, dividing both swarms and honey. If the apiarist gets no swarms, he ought to have more honey.

But the partnership business in bees is likely to lead to trouble unless there is a very clear and explicit understanding and agreement. And you can readily see that it may make a good deal of difference as to the skill of the apiarist. Suppose a man takes care of the bees who knows so little about the business that the bees do little but swarm, the honey crop not amounting to \$100. Then suppose another man who is thoroughly skilled in the business, and under his management the

proceeds amount to \$1,000. You can readily see that it would not be fair to give one man the same as the other. True, the unskillful man would get small pay at best, but in the hands of the skillful man the crop would be to a certain extent the result of that skill alone, and if he understands the matter rightly he will hardly be willing to allow the owner of the bees much more than a fair pay for the capital and risk involved. So it's hard to make a single rule to fit all cases.

Several Questions from Washington.

1. I have a colony that has been carrying out young brood. I think it is caused by the wax-worm. Would you leave it until spring, or hunt it out now? The hive has a fast bottom.

2. In filling my chaff ticks I got a mouse in the straw, and I have set a trap in the super, baited with cheese, but it doesn't tempt it. How can I get it? It is in a fast-bottom hive, with crooked combs.

3. We had an abundance of white clover bloom and no honey this year. There are hundreds of acres of ground "slasht" and lying idle. Would it pay to scatter seeds of wild flowers over this ground? If so, where could such seeds be had?

4. Is foxglove poisonous?

5. Do bees visit flowers that hang down from the stems as readily as those that stand upright? The frequent showers in spring wash the honey from those that stand upright.

WASHINGTON.

ANSWERS.—1. Better let it alone till spring. The worm in the hive is bad enough. You'd be worse than the worm.

2. Change the temptation. Try meat of different kinds. Perhaps if the cheese is toasted it may suit his mouseship better. Possibly he might be more tempted if the trap was at the entrance. Traps cost so little that you might have one in the super and another at the entrance. If you get him to eat anything that is not in the trap, then you might give him another feast of the same with poison in it.

3. If there's no objection to scattering the seeds, it might be a good plan to sow sweet clover seed. Any seedsman can get the seed for you. Any other of the plants that you see put down as honey-plants in your bee-book might do, such as catnip, pleurisy root, Simpson honey-plant, etc.

4. No and yes. There's no likelihood that you will ever be poisoned by coming in contact with foxglove, nor that your bees will be hurt by its flowers, and yet a poisonous article—digitalis—is obtained from the leaves of foxglove.

5. Bees will readily visit a plant with flowers hanging down if only it furnishes a good supply of nectar.

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Send us \$1.00 with a new name for the Bee Journal for 1898, and we will mail you your choice of the list below, to the value of 50 cents.

We make this offer only to those who are now subscribers; in other words, no one sending in his own name as a new subscriber can also claim a choice of this list:

50 copies "Honey as Food"	50c.
Wood Binder for the Bee Journal	20c.
50 copies of leaflet on "Why Eat Honey?"	20c.
50 " " on "How to Keep Honey"	20c.
50 " " on "Alsike Clover"	20c.
1 copy each "Preparation of Honey for the Market" (10c.) and Doolittle's "Hive I Use" (5c.)	15c.
1 copy each Dadants' "Handling Bees" (8c.) and "Bee-Pasturage a Nece-sity" (10c.)	18c.
Dr. Howard's book on "Foul Brood"	25c.
Kohnke's "Foul Brood" book	25c.
Cheehire's "Foul Brood" book (10c.) and Dadants' "Handling Bees" (8c.)	18c.
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Kendall's Horse-Book [English or German]	25c.
1 Pound White Clover Seed	25c.
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1 " Alfalfa " "	25c.
1 " Crimson " "	25c.
The Horse—How to Break and Handle	20c.

GENERAL ITEMS

Joining the New Union, Etc.

Enclosed find our membership fee to the United States Bee-Keepers' Union. Kindly let us have any circulars or information you have regarding the duties, etc., expected of each of the members of the Union, as we wish to do our portion of the work to down the adulteration of honey, as we consider ourselves situated in a good field to look into this question, owing to there being a great deal of adulteration carried on in and around New York City at the present time.

We produce considerable honey ourselves, but not enough to supply our trade; we therefore have to buy outside, and it is while doing this that we come across the adulterated article. The glucose question is one which is a source of great annoyance to us at times, especially when we find we are obliged to lose a sale by not being able to compete with the adulterated article.

We started out with the intention of selling only the genuine article, and intend to stick to this resolution right along. We find it a source of great encouragement to see how some of our customers appreciate what we are doing for them, once they reach that point where they feel they are dealing with honest people, and can rely on what we tell them regarding pure honey.

We hope the Bee Journal and the United States Bee-Keepers' Union may be successful in the lines of work they are undertaking, by trying to enforce laws against adulteration, and by keeping the bee-keepers out of the clutches of the dishonest commission-men. **HOLDING BROS.**

Hudson Co., N. J.

[The New Union has very little printed matter to send out as yet, we believe. But the General Manager's First Annual Report is now issued, and can be had by addressing Hon. Eugene Secor, Forest City, Iowa. —EDITOR.]

Two Seasons' Report.

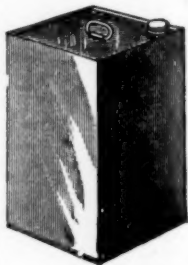
Next spring it will be two years since I started in bee-keeping; and if I should look back over the past two seasons I would have to confess to many "follies" or "fool capers," (as our Rip Van Winkle puts it). But then I always take courage, because I am not the only one liable to have mishaps, but the generals and the captains in the army of beedom are as prone to err and make mistakes as the humblest private in the ranks. I find that experience and practice are the ablest teachers in making a bee-master.

I started in the spring of 1896 with 4 colonies of 3-banded Italians purchased in Indiana. They arrived May 10. I increased them, through natural swarming, to 10, which with a colony of blacks, that I transferred from a neighbor's old-fashioned box-hive, (he getting the honey and I the bees.) made 11 colonies. I got no surplus. I wintered them on the summer stands, without a single loss. I used 8 frame, single-walled hives surrounded with an outer case of hemlock, the spaces between being stuffed with paper.

Starting with the 11 colonies, last spring, I increased them to 22. I worked exclusively for comb honey and have obtained a very fair crop. Buckwheat did not yield any honey, and all my surplus is white clover and raspberry in one-pound sections, and it is the whitest honey I ever saw. I believe that the majority of it is raspberry. I had a case of it at our county fair and it took first premium.

I prepared my bees, with the exception of 7 colonies, (which are in chaff hives) the same as last fall, only I used leaves instead of paper to fill out the spaces in the walls,

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A sample of the honey will be mailed to an intending purchaser, for 8 cents, to cover postage, packing, etc. We guarantee purity.

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GEORGE W. YORK & CO., 118 Michigan St., CHICAGO, ILL.

the leaves being more easily had than paper. The American Bee Journal has aided me greatly in the past, and I hope it will do the same in the future. May it prosper and flourish.
GEORGE REX, JR.
Lehigh Co., Pa., Dec. 7.

Cypress Wood for Hives.

On page 745 I see the question: "Can cypress boards be used for bee-hives? If not, why?" And Dr. Miller's answer also: "Who can tell us?"

I believe I can. First, I will say I have no cypress timber, and am not in the lumber business. Yes, cypress can be used for hive-making in every part where wood is used, except sections. The objection to using it for sections is that it is too dark; again, it may not work so nicely at the corners.

Cypress is of several kinds, but only two are generally recognized here, then only as cypress and red cypress. The first includes many shades of yellowish tinge. The red cypress resembles red cedar, and sometimes smells very much like cedar.

All cypress (heart) works most beautifully into moldings, bannisters, scrollwork, panels, doors, windows, sash-frames, casings, and in fact all finish work.

Cypress is of the first class where a timber is wanted that will resist rot the longest.

I have some bees, and now use Root's dovetailed hive. I have used cypress hives, and would use them again if I could get dovetailed hives made of it. It is light, durable, and does not warp easily.

A Mr. Hart, near New Orleans, recommends never using pine of any kind for hive-making; he even uses cypress for one-pound sections. I have used cypress brood-frames.
JAS. O. BURNS.

Tangipahoa Co., La.

[This seems to show satisfactorily that in regions where cypress is readily obtained it may be a very satisfactory wood for hives. It is hardly worth while to test its adaptability in the North, for the ease of obtaining and subsequent cheapness must always cut a large figure. On that account pine will probably continue to be the wood for all hives made in the North.—EDITOR.]

Wintering Bees—Swarming.

I have two colonies of Italian bees which have stored about 50 pounds of honey since late in June. I bought one colony that swarmed June 14; I moved them 10½ miles a few days after that; on the 24th they sent out a swarm that filled a new hive and a super as full as it would hold. They have worked nicely, and would undoubtedly have done better had I gotten them sooner. But now here I am at this time of year, and no cellar fit to winter them in. I am very anxious to get the two through safely, and must winter them out-of-doors. Their summer stand was in a cold place for winter, so I moved them to the south of a small shed, and covered them over with leaves, and covered the tops of the hives with sheaves of straw. I also put a board in front of the entrance so as to shade it, yet give ventilation. I took the super off, took the sections out, and filled the super with clean straw, and put it on in its place again before covering the hive with leaves.

Now I would like some bee-keeper who has had years of experience in wintering bees out-of-doors, tell me what he thinks of my plan so far, criticize it all he pleases, and then tell me what to do if it will not do as it is. The bees are all right now, or I suppose they are. They are alive, anyway, and the hives are as full of honey as they can hold. I did not weigh them, but I could not carry them with the supers on, and I can lift as much as the average bee-keeper, too, I'll guarantee. I don't think they will starve. The hives are 8-frame.

I askt some questions about preventing swarming last summer. One of your read-

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	5lb	10lb	25lb	50lb
Alsike Clover.....	.70	\$1.25	\$3.00	\$5.75
Sweet Clover (white).....	.60	1.00	2.25	4.00
White Clover.....	.90	1.60	3.75	7.00
Alfalfa Clover.....	.60	1.00	2.25	4.00
Crimson Clover.....	.55	.90	2.00	3.50

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ers got it into his head that I did not want my bees to increase. He is very badly mistaken. What I meant by preventing swarming was some method of keeping the bees from getting away entirely, or settling on the top of some tree. I am willing to let them turn out a new swarm twice in a season, but I want to get it without climbing trees.
H. J. WARNER.

Cedar Co., Iowa, Dec. 6.

[If you wanted to know how to keep swarming bees from settling on high trees, you wouldn't be likely to get much light by asking how to prevent swarming. You cannot prevent swarming without preventing increase at the same time, unless you resort to artificial increase. But preventing bees from absconding or settling on high trees when they swarm, is a much easier problem than the prevention of swarming. To prevent a swarm going off, clip the queen's wing. The bees may swarm out, and they may settle on a high tree, but they will not stay very long on the tree. When they find the queen is not with them, back they will come to the hive. The queen will of course jump off the alighting-board on the ground, when you will catch her, cage her, and when the swarm begins to come back have an empty hive ready in place of the old one for the bees to enter, and when fairly started to enter, let the queen run in.—EDITOR.]

Several Kinks in Bee-Keeping.

GETTING RID OF ANTS.—I have discovered several things in bee-keeping that have been of use to me, which may prove useful to others in the bee-business. Years ago the ants would make nests in the top of the hives to hatch their young. I sprinkled the cloth with strong brine that kept them out, but by accident I discovered a better way; I coopt up several hens with little chickens near the bees; they would run among the hives, and I pickt up the ants and cleaned them out. The ants only go in the top of the hives to hatch their young. It is a good, warm place, but they are around on the ground to get their food and the chickens pick them up.

PAINTING HONEY-BARRELS.—I extract all of my honey. I put it in alcohol barrels. I found that, drive the hoops the best I could, some of them would leak a little in hot, dry weather. I stoppt it by painting the barrels all over the outside.

PREVENTING ROBBING.—I have seen in the Bee Journal that you must not have any honey exposed near the bees in extracting-time or it would start the bees robbing. As fast as I extract the combs I set them out in the boxes near the bees and let them clean them up. It attracts the bees away from where I am taking out the honey, and they won't bother but very little, and I have no trouble with their robbing. It keeps them from robbing.

CHARLES INMAN.

Midland Co., Mich.



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is easily settled by the poultry-try question. You can settle the poultry question by reference to our Mammoth Annual Poultry Guide. Contains 100 pages printed in finest colors, 30 varieties of poultry and how to treat them in health and disease and how to make money with them. Poultry house plans, recipes, postpaid to John Bauscher Jr. Box 94, Freeport, Ill.

44 A 26t Please mention the Bee Journal



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22 A 1f

CHAS. MONDENG, Mgr.

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In the multitude of counsellors there is safety.—Prov. 11-14.

Position of Sections Over the Frames.

Query 65.—1. Do the sections in the supers you use run the same way as the frames in the hive, or across the frames?

2. Don't you think the sections will be finished up better or be **FILLED** better, if they run the same way as the brood-frames?—**EASTERNER.**

Mrs. L. Harrison—1. Yes. 2. No.

W. G. Larrabee—1. Same way as the frames. 2. No.

R. L. Taylor—1. Yes, the same way. 2. I don't know.

E. France—1. The same way as the frames. 2. Yes.

Emerson T. Abbott—1. The same way. 2. I do not know.

J. M. Hambaugh—1. Yes, with the brood-combs. 2. Yes, I believe so.

Prof. A. J. Cook—1 and 2. I have used both about equally. I see no choice.

Rev. M. Mahin—1. They run the same way. 2. I cannot see that it would make any difference.

Jas. A. Stone—1. The same way. 2. I have always thought it the best way, but do not know as to that.

J. E. Pond—1. The same way as the frames. 2. Yes, most assuredly; at least that is my experience.

G. M. Doolittle—1 and 2. I use them both ways, and see nothing in favor of either as to better-filled sections.

Dr. C. C. Miller—1. Same way. 2. I don't see why it should make any difference, unless because the entrance is a freer.

Wm. McEvoy—1. Mine run the same way as the frames in the hive. 2. Yes, where my system is for working for section honey is followed.

Chas. Dadant & Son—1. They run with the frames. 2. It matters but little how they are turned, so the bees have broad access to them from below.

Dr. J. P. H. Brown—1 and 2. In some of my supers they run across the frames, and in others they run with the frames. I have never been able to detect any difference.

Eugene Secor—1. The same way as the frames. 2. I don't know about that. The reason I prefer them to be parallel with the frames is because I only have to level the hive one way.

C. H. Dibbern—1. The same way. 2. It is more convenient, owing to the shape of my hives, and also the only way I could place them, as I tilt the hive forward to make it shed rain.

G. W. Demaree—1. The sections in my section-cases run with the frames. 2. I don't know that their position in the hive has anything to do with the manner in which they are finished by the bees, if the hive is level on its stand. But I want my hives a little low at their

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This 15th and latest edition of Prof. Cook's magnificent book of 460 pages, in neat and substantial cloth binding, we propose to give away to our present subscribers, for the work of getting new subscribers for the American Bee Journal.

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entrances to drain them, and in this case the section should run with the frames.

J. A. Green—1. Same way. 2. I do not think it would make any difference. The only objection I can see to having them run crosswise is that the hive must be leveled both ways, which is neither easy nor desirable.

A. F. Brown—1 and 2. My sections run parallel with the frames. For many reasons this is best. I do not think it makes much difference to the bees which way they run; they will fill them for me one way as well as the other.



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About 90 Colonies of Italians. Any one wanting to start an apiary cannot do better than to call on Dr. E. Gallup, Santa Ana, Calif., and examine the Bees before purchasing elsewhere. Double sets of Combs in Langstroth-Simplicity Hives, and warranted a superior lot of Bees for business. Correspondence solicited. **Dr. E. GALLUP,**
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Cupid's Dart sped through space,
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Its target—in a conspicuous place—
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Cupid at once withdrew the arrow,
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The Yields and Price of Honey; the Pasture and Nectar-Producing Plants; the Bee-Ranches and how they are conducted. In fact the entire field is fully covered by and expert bee-man. Besides this, the paper also tells you all about California Agriculture and Horticulture. \$1.00 per Year; Six Months, 50 cents. Sample Copies 10 cents.

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Convention Notices.

Ohio-New York - Pennsylvania. - The Northeastern Ohio, Western New York, and Northwestern Pennsylvania Bee-Keepers' Association will hold their annual convention at Corry, Pa., Jan. 12 and 13, 1898. An interesting program has been arranged. All are invited. **ED JOLLY, Sec.** Franklin, Pa.

California. - The annual meeting of the California State Bee-Keepers' Association will be held on Monday, Jan. 10, 1898, commencing at 2 p.m. The California Bee-Keepers' Exchange will hold its annual session on Tuesday, Jan. 11 at 2 p.m. A full attendance of members is desired. Mr. Cowan, editor of the British Bee Journal, will be in attendance. Thos. G. Newman will also attend, health permitting. **PROF. A. J. COOK, Pres.** J. H. MARTIN, Sec., Los Angeles, Calif.

See the premium offers on page 11!

HONEY and BEESWAX

MARKET QUOTATIONS.

Chicago, Ill., Dec. 13. - Fancy white 11 to 12c. No. 1, 10c.; fancy amber, 8 to 9c.; No. 1, 7c.; fancy dark, 7c. Extracted, white, 5 to 6c.; amber, 4 to 5c.; dark, 4c. Beeswax, 28 to 27c. The demand for comb honey is not satisfactory, and it can be bought at even lower prices than quoted, where it is not in the hands of regular dealers. There seems to be no outside demand. Extracted without special change. Beeswax is scarce.

Milwaukee, Wis., Dec. 13. - Fancy white, 12 to 13c.; No. 1, 11 to 12c.; fancy amber, 9 to 10c.; fancy dark, 8 to 9c. Extracted, white, 5½ to 6c.; amber, 4½ to 5c. Beeswax, 25 to 27c.

This market has been fairly sustained on honey since our last report. Values remain about the same, as there has been a very good consumptive demand, especially for extracted, while the comb honey has seemed to accumulate with increased receipts, and we feel to meet the demand even if at a reduction from quotations. There seems to be more demand from those who eat honey than in former seasons, which is a good feature of the trade which we desire to encourage. We are expecting a good trade from this forward.

Cleveland, Ohio, Dec. 15. - Fancy white, 12 to 13½c.; No. 1, 11 to 12c.; No. 1 amber, 9 to 10c. Extracted, white, 6 to 7c.; amber, 4 to 5c. Beeswax, 22 to 25c.

New York, N. Y., Dec. 22. - Fancy white 11 to 11½c.; off grades, 9 to 10c.; buckwheat and mixt, 6½ to 7c. Extracted, California white, 5 to 5½c.; light amber, 4½ to 4¾c.; white clover and basswood, 5 to 5½c.; buckwheat, 4 to 4½c.; Southern, 50c. a gallon. Beeswax is in good demand at 25 to 27c.

Our market remains quiet. Fancy grades of white comb are about cleaned up, and these would find sale on arrival at quotations. We have a large stock of buckwheat, mixt, and off grades of white, and, as the demand for these is very light, we cannot encourage further shipments for the near future. Extracted of all kinds is selling fairly well.

Minneapolis, Minn., Dec. 15. - Fancy white, 11 to 12c.; No. 1, 10 to 11c.; fancy amber, 10c.; No. 1, 9½c.; fancy dark, 9 to 9½c.; No. 1, 8 to 9c. Extracted, white, 5 to 6c.; amber, 4 to 4½c.; dark, 4c. Beeswax, 23c.

Market holds firm at above prices. Good demand for extracted. Wax is quiet but firm at 23c.

Kansas City, Mo., Dec. 15. - Fancy white, 10½ to 11c.; No. 1, 10 to 10½c.; fancy amber, 9½ to 10c.; No. 1, 9 to 9½c.; fancy dark, 8½ to 9c. Extracted, white, 5½ to 6c.; amber, 5 to 5½c.; dark, 4 to 4½c. Beeswax, 20 to 22c.

St. Louis, Mo., Dec. 13. - Fancy white, 12 to 12½c.; No. 1, 10½ to 11½c.; fancy amber, 9½ to 10c.; No. 1, 9c.; fancy dark, 8c. Extracted, white, 5 to 5½c.; amber, 4 to 4½c.; dark, 3½ to 4c. Beeswax, 24½ to 25c.

We would advise prompt shipments of honey. We do not see any probabilities of better prices. The stock of honey is ample for the demand.

Albany, N. Y., Dec. 13. - Fancy white, 12 to 13c.; No. 1, 11 to 12c.; fancy amber, 8 to 9c.; No. 1, 8c.; fancy dark, 8c.; No. 1, 7½ to 8c. Extracted, white, 5 to 6c.; amber, 4½ to 5c. dark, 4 to 4½c.

There is an ample stock of comb on hand and selling freely at quotations. Extracted is not plentiful and from information received there is not much in the hands of producers.

Buffalo, N. Y., Dec. 24. - Strictly fancy 1-pound comb honey is more active at mostly 10c. occasionally 11c., but all other grades are dormant and have to be cut to almost any price to move them, ranging from 8c. down to 6c. Extracted is moving slowly at 5 to 6c. for fancy; dark, 4 to 4½c. A liberal quantity can be sold; and, of course, the low grades can be forced off for what they will bring. If owners cannot do any better.

There is no selling pressure of consequence on desirable lots of water white, either comb or extracted, such being held as a rule at full quotations. Amber grades are in greater supply than the demand and market for this class presents an easy tone. Dark qualities are in poor request, despite low asking figures. Beeswax is firm at current quotations, with very little offering, either from first or second hands.

Philadelphia, Pa., Nov. 13. - Fancy white, 13 to 14c.; No. 1, 12c.; fancy amber, 10c.; No. 1, 9c.; No. 1 dark, 8c. Extracted, white, 5 to 5½c.; amber, 5c.; dark, 4 to 4½c. Beeswax, 27c.

Honey is arriving very freely; market is a little off. Beeswax is in good demand.

Boston, Mass., Nov. 8. - Fancy white, in cartons, 13c.; No. 1, 11 to 12c.; fancy amber, 10c. Extracted, white, 6 to 7c.; amber, 5 to 5½c. Beeswax, 28c.

No. 1 and fancy honey has sold well during the past 10 days, but off grades and light weight is going slowly. Beeswax is in good demand and but little here.

Detroit, Mich., Nov. 9. - Fancy white, 11 to 12c.; No. 1, 10 to 11c.; fancy amber, 9 to 10c.; No. 1, 8 to 9c.; fancy dark, 7 to 8c. Extracted, white, 5 to 6c.; amber, 4 to 5c. Beeswax, 25 to 26c.

Indianapolis, Ind., Nov. 8. - Fancy white, 11 to 13c.; No. 1, 9 to 10c.; fancy amber, 9 to 10c. Extracted, white, 5 to 6c. Beeswax, 25c.

Demand for fancy white comb honey and fancy white extracted is exceptionally good, while there is almost no demand for dark or amber comb or extracted honey.

Cincinnati, Ohio, Dec. 22. - There is no change in prices, but rather a slow demand for the holiday season. We quote 10 to 14c. as the range of prices for best white comb honey, and 3 to 4c. for extracted, according to quality. Beeswax is in fair demand at 20 to 25c. for good to choice yellow.

List of Honey and Beeswax Dealers.

Most of whom Quote in this Journal.

Chicago, Ills.

R. A. BURNETT & Co., 163 South Water Street.

New York, N. Y.

HILDRETH BROS. & SEGLER, 120 & 122 W. Broadway.

Kansas City, Mo.

O. C. CLEMOMS & Co., 423 Walnut St.

Buffalo, N. Y.

BATTERSON & Co., 167 & 169 Scott St.

Hamilton, Ills.

CHAS. DADANT & SON.

Cleveland, Ohio.

A. B. WILLIAMS & Co., 80 & 82 Broadway.

Philadelphia, Pa.

WM. A. SELSER, 10 Vine St.
Mr. Selser handles no honey on commission

St. Louis, Mo.

WESTCOTT COM. CO., 213 Market St

Minneapolis, Minn.

S. H. HALL & CO.

Milwaukee, Wis.

A. V. BISHOP & Co.

Boston, Mass.

BLAKE, SCOTT & LEE, 57 Chatham Street.

Detroit, Mich.

M. H. HUNT, Bell Branch, Wayne Co., Mich.

Indianapolis, Ind.

WALTER S. POWDER, 162 Massachusetts Ave.

Albany, N. Y.

CHAS. McCULLOCH & Co., 380 Broadway.

Cincinnati, Ohio.

C. F. MUTH & SON, cor. Freeman & Central Ave.

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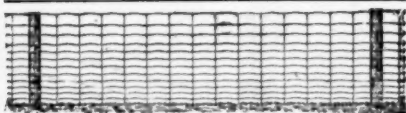
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Are YOU the man who wants to buy?

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must have an eye out for signals. One need not
 watch the thermometer on account of his Page
 Fence. Rain or shine, fever heat or zero weather,
 "the coil is in it," and keeps it tight.

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 and **Everything** used in the
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America. We supply Deal-
 ers as well as consumers. We
 have Dry Kiln, Improved Machinery, 40,000
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 We make prompt shipment.

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Working Wax into Founda-
 tion for CASH A Specialty,
At Reduced Prices during the Winter.

My Foundation will SPEAK for ITSELF, and
 prices are O. K. So do not fail to write for a
 Catalog with prices and samples.

Beeswax taken in Exchange for Founda-
 tion or any other Supplies.

GUS DITTMER,

AUGUSTA, WIS.

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The A. I. Root Co.'s Goods Wholesale,
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Including their discounts for Goods wanted
 for use another season. It will pay you to
 send me list of Goods wanted. **M. H. HUNT**
 Cash for Beeswax. **BELL BRANCH, MICH.**

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21st Year **Dadant's Foundation.** 21st Year

Why Does It Sell So Well?

Because it has always given better satisfaction than any other.

Because **IN 21 YEARS** there have not been any complaints, but thou-
 sands of compliments.

We Guarantee Satisfaction.

What more can anybody do? **Beauty, Purity, Firmness, No Sag-
 ging, No Loss. PATENT WEED PROCESS SHEETING.**

Send Name for Our Catalog, Samples of Foundation and Veil Material. We
 sell the best VAILS, cotton or silk.

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LANGSTROTH ON THE HONEY-BEE, Revised.

The Classic in Bee-Culture—Price, \$1.25, by mail.

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OUR MOTTO—"Well Manufactured Stock! Quick Shipments!"

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 —AND—
BEE-KEEPERS' SUPPLIES.

We make a specialty of making the very best Sections on the market.
 The **BASSWOOD** in this part of Wisconsin is acknowledged by all to be the
 best for making the **One-Piece Honey-Sections**—selected, young, and
 thrifty timber is used.

Write for Illustrated Catalog and Price-List FREE.

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—WHO CAN TURN OUT—

FENCES (Cleated Separators)

—AND—

PLAIN SECTIONS

(Sections without Insets)

FOR 1898.

Having special appliances and machinery, we can make them right. Nothing in
 late years has seemed to stir such a furor

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If you don't know about them, send to

THE A. I. ROOT CO.,

MEDINA, OHIO.

New 1898 Catalog Largely Re-written, out by January 15.